

Wytheville,  $\frac{1}{2}$  inch. *Washington Territory*: Spokane Falls, 5 inches. *West Virginia*: Flemington, 1 inch; Morgantown,  $\frac{1}{2}$  inch. *Wisconsin*: Beloit and Embarrass,  $\frac{1}{2}$  inch.

*Hail*.—Dubuque, 20th, from 7.03 to 7.08 p. m. Bangor, Me., 18th, a slight hail storm between 10 and 11 a. m. North Volney, N. Y., 12th. Greensboro, N. C., 29th. Wytheville, Va., 1st, 29th. Albany, 8th.

*Rain, Hail or Snow from a Cloudless Sky*.—Wellington, Kan., 7th, shower of spongy hail, lasting three minutes. Bainbridge Island, Wash. Ty., 18th, rain. Dyberry, Pa., snow, lasting 30 minutes.

## RELATIVE HUMIDITY.

The percentage of mean relative humidity for the month ranges as follows: New England, from 73 to 79; Middle Atlantic States, 67 to 80; South Atlantic States, 66 to 83; Florida Peninsula, 75 to 78; East Gulf States, 68 to 79; West Gulf States, 68 to 85; Rio Grande Valley, 72 to 85; Ohio Valley and Tennessee, 70 to 77; Lower Lake Region, 66 to 80; Upper Lake Region, 66 to 87; Extreme Northwest 71 to 87; Upper Mississippi Valley, 65 to 79; Missouri Valley, 65 to 70; Northern Slope, 53 to 71; Middle Slope, 47 to 70; Southern Slope, 56 to 75; Southern Plateau, 50 to 63; Middle Plateau, 42 to 80; Northern Plateau, 73 to 86; North Pacific Coast Region, 84 to 86; Middle Pacific Coast Region, 84 to 86; South Pacific Coast Region, 47 to 80. *High stations* report the following percentages not corrected for altitude: Cheyenne, 48.0; Pike's Peak, 66.4; Mt. Washington, 84.4.

## WINDS.

The prevailing winds during the month of December, 1881, at Signal Service stations, are shown on chart No. II, by arrows, which fly with the wind. Throughout the Ohio Valley, Lake Region, Upper Mississippi Valley, and New England, the winds are *southerly*; in the Middle Atlantic States *westerly*; in the South Atlantic and Eastern Gulf States, *northeasterly*; in the Western Gulf States and Texas, *variable*; in the Missouri Valley, and Northwest, *northwesterly*; throughout the Northern Slope, Northern Plateau, and North Pacific Coast Region, *south to west*; in California, *northwesterly*; elsewhere, *variable*.

*Total Movements of the Air*.—The following are the largest total movements at Signal Service stations: Mt. Washington, 31,104 miles; Pike's Peak, 17,972; Ft. Shaw, Mont., 13,651; Delaware Breakwater, 12,833; New Shoreham, R. I., 12,736; Kittyhawk, N. C., 12,595; Wood's Holl, Mass., 12,166; Thatchers Island, Mass., 12,064; Hatteras, N. C., 12,035; Cape May, 12,018; Sandy Hook, N. J., 10,791; Sandusky, 10,339; Ft. Benton, Mont., 10,118; Portsmouth, N. C., 9,762; Ft. Assinaboine, Mont., 9,661; Indianola, 9,621; Barnegat, N. J., 9,524; Macon, N. C., 9,376; Champaign, Ill., 9,321; Port Eads, 9,303; Cheyenne, 9,174; Buffalo, 9,172; Rochester, 9,126; Cape Henry, Va., 8,799; Grand Haven, 8,728; Milwaukee, 8,456; St. Vincent, Minn., 8,405; Key West, 8,256; Atlanta, 8,158; Burlington, Vt., 8,069; Boston, 8,047. The *smallest* are: La Mesilla, N. M., 725; Ft. Missoula, Mont., 1,359; Lynchburg, Va., 1,365; Salt Lake City, 1,473; Visalia, Cal., 1,700; Red Bluff, Cal., 2,250; Memphis, 2,365; Silver City, N. M., 2,452; Boise City, 2,534; Springfield, Mass., 2,892; Florence, Ariz., 2,939; Rio Grande, Tex., 2,970.

*High Winds*.—On the summit of Mt. Washington the highest velocities recorded were: 170 miles, NW., 1st; 100, NW., 2d; 104, W., 14th; 126, SW., 22d. The dates other than those above mentioned, on which velocities exceeding 75 miles per hour occurred, are as follows: 6th to 10th, 12th, 13th, 15th, 17th, 18th, 20th 24th to 26th, 29th, 30th. On summit of Pike's Peak, maximum velocity, 76 miles, NW., occurred on the 29th; velocities of 50 miles or over were recorded as follows: on the 5th, 10th, 12th, 27th, 28th, 30th. Other high velocities were reported by the following stations: Ft. Assinaboine, Mont., 50 miles, SW., 26th; Ft. Benton, Mont., 52, NW., 7th; Ft. Custer, Mont., 52, W., 11th; Port Eads, La., 52, E., 25th; Cape May, 52, NW., 7th; Delaware Breakwater, 54, NW., 23d; Kitty Hawk, N. C., 56, N., 15th.

*Local Storms*.—Fremont, Ohio, 9th, several buildings wrecked; unusually high westerly winds during the day. Terrene, Miss., 13th, "heaviest storm ever known here, occurred during the evening." Pensacola, Fla., 25th, heavy SE. gale; signs, etc., blown down; bark driven ashore outside of harbor. Macon, N. C., 27th, heavy SW. gale; fishing smack blown ashore.

## VERIFICATIONS.

*Indications*.—The detailed comparison of the tri-daily indications for December, 1881, with the telegraphic reports for the succeeding twenty-four hours, shows the general percentage of verifications to be 88.95 per cent. The percentages for the four elements are: Weather, 90.28; Direction of the Wind, 89.42; Temperature, 88.66; Barometer, 87.29 per cent. By geographical districts they are: For New England, 91.8; Middle Atlantic States, 91.5; South Atlantic States, 91.6; Eastern Gulf States, 88.6; Western Gulf States, 85.4; Lower Lake Region, 89.8; Upper Lake Region, 88.6; Tennessee and the Ohio Valley, 88.4; Upper Mississippi Valley, 86.3; Lower